

CAMERA CALIBRATION SYSTEM USING PLANAR CONCENTRIC CIRCLES AND METHOD THEREOF

ABSTRACT OF THE DISCLOSURE

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The invention relates to a camera calibration system and method thereof, which is capable of easily performing camera calibration using a concentric circle pattern. According to the invention, a method of calibrating a camera calibrates the internal parameters of the camera required to measure geometric information of an object using projection invariable characteristic of concentric circles. The method comprises a first step of taking images of the calibration pattern consisting of two or more concentric circles located at the same plane and having different radius at different angles to obtain projection images of ellipses, a second step of calculating the central point of the projected concentric circles using a given algorithm, and a third step of calculating the principal point and focal point of camera using a nonlinear minimization algorithm based on the central point thus obtained.